

CRUISE REPORT
FOR
MMS CRUISE CAMP 3-3
March 8, 1989
CALIFORNIA OCS PHASE II MONITORING PROGRAM
Performed for

U. S. Department of the Interior
MINERALS MANAGEMENT SERVICE
Pacific OCS Office

1340 West Sixth Street
Los Angeles, California 90017

by

David Drake and David Cacchione
U. S. Geological Survey
345 Middlefield Road
Menlo Park, California

Brad Butman
U. S. Geological Survey
Woods Hole, Massachusetts

Cheryl Ann Butman
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts

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21-28 FEBRUARY 1989

Introduction

Cruise CAMP 3-3 was the third of four major cruises scheduled for Year Three of the MMS California Phase II Monitoring Program (MMS Contract No. 14-12-0001-30262). This program is designed to monitor potential environmental changes at a series of regional stations and at two arrays of site-specific stations near oil production platforms in the Western Santa Barbara Channel and Santa Maria Basin region of the California OCS. Platform Hidalgo (Lease P-0450) off Point Arguello was selected for hard-bottom, site-specific monitoring, and Platform Julius (Lease P-0409) off Point Sal was selected for soft-bottom, site-specific monitoring. Specific objectives of the program are:

1. To detect and measure potential long-term (or short-term) changes in the marine environment adjacent to oil and gas platforms; and
2. To determine whether changes observed in the marine environment during the monitoring period are caused by drilling-related activities or are a product of natural processes.

To accomplish these objectives, we are looking closely for potential biological changes and concomitant chemical or physical changes that can be linked to specific drilling events. An overall objective of Cruise CAMP 3-3 was to provide environmental data to help make these kinds of correlations and inferences.

The M/V Farnella was the support vessel for the cruise.

Objectives

This cruise was devoted primarily to the recovery of the tripods, current meter moorings and surface guard buoys that were deployed during CAMP 3-2 (December 1988). Box cores were also collected at selected sites to provide material for detailed sediment analyses (grain size, radioisotope profiles, food quality of sediments from phytoplankton inputs, and bioturbation measurements). The specific objectives were to:

1. Recover GEOPROBE tripods at project sites R-8 and PJ1.
2. Recover current meter moorings at R-8, PJ-1 and R-9.
3. Recover surface guard buoys at R-8, PJ-1 and R-9.
4. Collect box cores for detailed sediment analyses.
5. Collect side scan sonar data near R-8, PT-1 and R-9; and
6. Collect hydrographic and suspended matter samples.

Participating Personnel

Dave Cacchione	USGS, Menlo Park
Dave Drake	USGS, Menlo Park
Jim Nicholson	USGS, Menlo Park
George Tate	USGS, Menlo Park
Joanne Thede	USGS, Menlo Park
Rick Vail	USGS, Menlo Park
Kevin O'Toole	USGS, Menlo Park
Corky Ozanne	USGS, Menlo Park
Kaye Kinoshita	USGS, Menlo Park
Leda Beth Pickthorn	USGS, Menlo Park
Brad Butman	USGS, Woods Hole
Cheryl Ann Butman	USGS, Woods Hole
Bill Strahle	USGS, Woods Hole
Rick Rendigs	USGS, Woods Hole
Rose Petracca	Woods Hole Oceanographic Institution
Charlotte Fuller	Woods Hole Oceanographic Institution
Kathleen Fisher	Office of Naval Research
P.J. Burkett	Office of Naval Research

Major Equipment List

CTD System	USGS, Menlo Park
GEOPROBES (2)	USGS, Menlo Park
Guard Buoys (5)	USGS, Woods Hole
VACM Moorings (3)	USGS, Woods Hole
Side Scan System	USGS, Menlo Park
Box Core	Battelle Ocean Sciences

Summary of Operations

M/V FARNELLA departed Redwood City on 21 February and arrived at project site R-8 at 0400 hours, 22 February. Recovery operations began at R-8 and continued until all instruments and surface buoys were safely onboard (see CAMP 3-2 cruise report, dated 3 January 1989, for listings of the instrument locations). The recovery operations went smoothly and all deployed equipment was recovered in good condition. While in the CAMP area, FARNELLA received a call from a local fisherman who advised us that the surface guard buoys at R-9 had been run over by a tug and barge in December 1988. This explains why one of the R-9 buoys was lost about 7-10 days after deployment.

Box core samples were collected at 5 stations and the reference coordinates are shown in Table 1. Navigation was by GPS and Loran C. Based on earlier comparison with a shore-based transponder system, our position accuracy is $\pm 25\text{m}$. The box core samples were processed onboard by a team of scientists from WHOI/MIT led by C.A. Butman.

Forty-seven trackline kilometers of side scan sonar data were collected near R-8, PJ-1 and R-9. These tracks were repeats of a survey completed during CAMP 3-2. Interestingly, the new data near R-8 reveal several areas of rippled sand bottom that were not found during CAMP 3-2.

Hydrographic data and water samples were collected at 13 stations on two cross-shelf transects (see Table 2). Thirty-six water samples were filtered through membrane filters for detailed particle analyses.

Problems Encountered

Upon recovery of the surface guard buoy at R-9 it was noticed that a substantial length of the mooring wire had been severely abraded. We suspect this damage occurred when a barge ran over the R-9 surface buoys in December 1988.

Table 1. Reference Coordinates for Box Core Stations

Site	Depth	Latitude Longitude	Comment
R-8	80m	34°55.25 120°45.85	C.A Butman (WHOI/MIT)
R-9	400m	34°53.62 120°59.15	C.A. Butman
PJ-1	144m	34°55.80 120°49.90	C.A. Butman
R-7	563m	34°52.92 121°10.34	C.A. Butman
PJ-1	152m	34°55.77 120°49.91	C.A. Butman

Table 2. Reference Coordinates for CTD* Stations

Site	Latitude Longitude	Depth
Central Line (No. 1)	34°55.76 120°43.39	55 m
No. 2)	34°55.65 120°45.54	87 m
(No.3)	34°55.27 120°47.90	120 m
(No. 4)	34°55.00 120°50.23	157 m
(No. 5) 120°52.79	34°54.67	210 m
(No. 6)	34°54.27 120°55.87	290 m
(No. 7)	34°53.58 120°58.86	385 m
(No. 8)	34°53.40 121°04.98	530 M
(No. 9)	34°52.92 121°10.26	565 m
Northern Line (No. 1)	35°05.75 120°45.26	62 m
(No. 2)	35°05.61 120°49.23	100 m
(No. 3)	35°05.47 120°53.30	167 m
(No. 4)	35°04.98 121°00.94	420 m

* NBIS MARK IIIB CTD and 25 cm pathlength sea tech transmissometer.